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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,143	07/15/2003	Sukesh H. Pai	MS1-1487US	8477

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EXAMINER	
HSU, ALPUS	

ART UNIT	PAPER NUMBER
2465	

NOTIFICATION DATE	DELIVERY MODE
11/19/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary	Application No.	Applicant(s)	
	10/620,143	PAI ET AL.	
	Examiner	Art Unit	
	Alpus H. Hsu	2465	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) *1-19 and 23-32* is/are withdrawn from consideration.

5)☒ Claim(s) *20-22,36-41 and 48-50* is/are allowed.

6)☒ Claim(s) *33-35, 42-47, 51-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The indicated allowability of claims 33-35 is withdrawn in view of the reference(s) to SALA and LAURSEN (both of records). Rejections based on the cited reference(s) follow.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 33-35, 42, 43, 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALA in view of LAURSEN (both of records).

Referring to claim 33, SALA discloses a system comprising: a request queue (128) for receiving requests to be transmitted to client devices (104s) via a downstream network path; a plurality of upstream request queues (124) for grouping the requests based on upstream network paths over which responses to the requests may be received; and a bandwidth management system (106, 130 and 132) configured to schedule the requests from the plurality of upstream request queues for transmission to the client devices based, at least in part, on available bandwidth associated with one or more of the upstream network paths (see col. 4, lines 23-67).

SALA differs from the claim, in that, it does not disclose the feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device, which is well known feature in the art for service programs distribution in CATV field.

LAURSEN, for example, from the same field of endeavor, teaches the same feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device (see col. 11, line 64 to col. 12, line 5), which can be easily adopted by one skilled in the art to implement in the system of SALA, to provide conventional service programs distribution from head-end to client device to enhance the system performance.

Regarding claim 34, SALA in view of LAURSEN teaches that the means for scheduling further schedules the transmission of the request based, at least in part, on an available downstream network bandwidth (see col. 4, lines 9-40 in SALA).

Referring to claim 35, SALA discloses that the system being implemented as a component of a cable television system headend (see col. 3, lines 59-62).

Regarding claim 42, SALA discloses a system comprising: means for receiving a request (122); means for queuing (124) the request based on an upstream network path over which a

response to the request may be received; and means for scheduling (DOWNSTREAM SCHEDULER) transmission of the request based, at least in part, on an available upstream network bandwidth (see col. 4, lines 23-67).

SALA differs from the claim, in that, it does not disclose the feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device, which is well known feature in the art for service programs distribution in CATV field.

LAURSEN, for example, from the same field of endeavor, teaches the same feature of receiving the request from an application, wherein the request is to be transmitted to a particular client device (see col. 11, line 64 to col. 12, line 5), which can be easily adopted by one skilled in the art to implement in the system of SALA, to provide conventional service programs distribution from head-end to client device to enhance the system performance.

Regarding claim 43, SALA in view of LAURSEN teaches that the means for scheduling further schedules the transmission of the request based, at least in part, on an available downstream network bandwidth (see col. 4, lines 9-40 in SALA).

Regarding claim 45, SALA in view of LAURSEN teaches a further means for estimating an anticipated response size (see col. 6, lines 4-11 in SALA).

Referring to claim 46, SALA in view of LAURSEN also teaches a computer-readable storage media (see col. 8, lines 36-44 in SALA) comprising computer-executable instructions that, when executed, direct a computer system to perform a method with method steps that are the same as the functions recited in claim 42.

6. Claims 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALA in view of LAURSEN as applied to claim 42 above, and further in view of DUGAD (of record).

Regarding claim 44, SALA in view of LAURSEN differs from the claim, in that, it does not disclose the feature of scheduling based on a number of pending requests previously transmitted to other client devices associated with the upstream network paths, which is also well known in the art for load balancing purpose.

DUGAD, for example, from the similar field of endeavor, teaches the feature of scheduling based on a number of pending requests previously transmitted to other client devices associated with the upstream network paths (see col. 8, lines 34-52, col. 9, line 60 col. 10, line 16), which can be easily adopted by one skilled in the art to implement in the system of SALA in view of LAURSEN, to provide specific request scheduling to further improve the system efficiency.

Regarding claim 47, SALA in view of LAURSEN and further in view of DUGAD also teaches a computer-readable storage media (see col. 8, lines 36-44 in SALA) comprising computer-executable instructions that, when executed, direct a computer system to perform a method with method steps that are the same as the functions recited in claims 42 and 44.

7. Claims 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over HEMPEL (of record) in view of WILLIAMS in U.S. Patent No. 6,411,982 B2 (newly cited), hereinafter referred to as WILLIAMS.

Regarding claim 51, HEMPEL discloses a computer-readable storage media (see col. 3, lines 9-13) comprises computer-executable instructions that, when executed, direct a computing system to perform a method comprising: scheduling requests at a scheduling interval by placing the requests in a dispatch queue, the scheduling interval defined by a particular value (see col. 2,

lines 44-47, col. 3, lines 1-9, col. 5, lines 38-47); determining a number of requests in the dispatch queue (see col. 3, lines 1-4, col. 6, lines 44-51).

HEMPEL differs from the claim, in that, it does not disclose the feature of performing the scheduling at a scheduling interval defined by a particular value, which is well known in the art and commonly applied in communications field for conventional data transmission scheduling purpose.

WILLIAMS, for example, from the similar field of endeavor, teaches the feature of scheduling the requests for tasks at a scheduling interval defined by a particular value (see abstract, col. 2, lines 52-58, col. 3, lines 10-27), which can be easily adopted by one skilled in the art to implement in the system of HEMPEL, to provide conventional task scheduling to further improve the system efficiency.

HEMPEL in view of WILLIAMS also differs from the claim, in that, it does not disclose the feature of in an event that the number of requests in the dispatch queue is greater than or equal to a maximum number of allowed pending requests, preventing requests from being scheduled until the number of requests in the dispatch queue is less than the maximum number of allowed pending requests, which is well known in the art and commonly applied in communications field for data flow controlling purpose. Since HEMPEL also discloses the feature of maximizing the scheduling process (see col. 2, lines 52-57, col. 6, lines 44-51), it would have been obvious to one skilled in the art to further modify the system of HEMPEL to provide the same feature of preventing requests from being scheduled until the number of requests in the dispatch queue is less than the maximum number of allowed pending requests in the event that the number of requests in the dispatch queue is greater than or equal to a maximum

number of allowed pending requests to provide data flow control to further improve the system efficiency.

Regarding claim 52, HEMPEL in view of WILLIAMS discloses that the particular value is configurable (see col. 2, lines 52-57 in HEMPEL).

Regarding claim 53, although HEMPEL in view of WILLIAMS fails to disclose the feature of providing the maximum number of allowed pending requests being equal to an integer multiple of a number of requests that can be scheduled into the dispatch queue during a single scheduling interval, it would have been obvious to one skilled in the art to further modify as design choice.

8. Claims 20-22, 36-41, 48-50 are allowable over the prior art of record.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harris et al. and Freund et al. are additionally cited to show the common feature of data scheduling utilizing scheduler, request queues and dispatcher similar to the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHH

/Alpus H. Hsu/
Primary Examiner, Art Unit 2465